

Amendments to the Claims:

A listing of the entire set of pending claims (including amendments to the claims, if any) is submitted herewith per 37 CFR 1.121. This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-2 (Canceled)

3. (Currently amended) ~~A method as claimed in Claim 2~~ The method of claim 4, wherein the data is transmitted using the Common Isochronous Packet Format defined in IEC61883.

4. (Currently amended) ~~A method as claimed in any preceding claim in which A~~ method of correcting timing errors when transmitting isochronous data through a packet based communication network in which at least some of the data packets contain timestamps which indicate to a receiver the time at which the data should be processed, the method comprising:

inserting transmission timestamps in isochronous data packets which relate to an absolute time as defined by a transmission clock and which are to be transmitted over a transmission network;

receiving the data packets and detecting and temporally recording the transmission timestamps therein;

providing a receiver clock which is synchronised in frequency but not necessarily in absolute time with the transmission clock;

storing the absolute time of the receiver clock when the first packet containing a transmission timestamp is received;

adding a given time offset to the stored receiver clock time, the offset being greater than or equal to the maximum variation in time between successive received data packets, to define the output time of the first of the received data packets;

subtracting the value of the transmission timestamp in the first received data packet from the transmission timestamp in each subsequently received data packet;
and

adding the difference between the transmission timestamp of the present data packet and the transmission timestamp of the first data packet to the output time of the first data packet to define the output time of the present packet,

wherein the data is MPEG encoded data and the transmission timestamps are separate from and independent of any MPEG timestamps, and the communication system operates according to an IEEE1394 standard.

5. (Currently amended) ~~A method as claimed in any of Claims 1 to 3 in which~~ A method of correcting timing errors when transmitting isochronous data through a packet based communication network in which at least some of the data packets contain timestamps which indicate to a receiver the time at which the data should be processed, the method comprising:

inserting transmission timestamps in isochronous data packets which relate to an absolute time as defined by a transmission clock and which are to be transmitted over a transmission network;

receiving the data packets and detecting and temporally recording the transmission timestamps therein;

providing a receiver clock which is synchronised in frequency but not necessarily in absolute time with the transmission clock;

storing the absolute time of the receiver clock when the first packet containing a transmission timestamp is received;

adding a given time offset to the stored receiver clock time, the offset being greater than or equal to the maximum variation in time between successive received data packets, to define the output time of the first of the received data packets;

subtracting the value of the transmission timestamp in the first received data packet from the transmission timestamp in each subsequently received data packet;
and

adding the difference between the transmission timestamp of the present data packet and the transmission timestamp of the first data packet to the output time of the first data packet to define the output time of the present packet,

wherein the data is MPEG encoded data and the transmission timestamps are separate from and independent of any MPEG timestamps, and the communication system operates in Asynchronous Transfer Mode.

6. (Currently amended) ~~A method as claimed in any of Claims 1 to 3 in which~~ A method of correcting timing errors when transmitting isochronous data through a packet based communication network in which at least some of the data packets contain timestamps which indicate to a receiver the time at which the data should be processed, the method comprising:

inserting transmission timestamps in isochronous data packets which relate to an absolute time as defined by a transmission clock and which are to be transmitted over a transmission network;

receiving the data packets and detecting and temporally recording the transmission timestamps therein;

providing a receiver clock which is synchronised in frequency but not necessarily in absolute time with the transmission clock;

storing the absolute time of the receiver clock when the first packet containing a transmission timestamp is received;

adding a given time offset to the stored receiver clock time, the offset being greater than or equal to the maximum variation in time between successive received data packets, to define the output time of the first of the received data packets;

subtracting the value of the transmission timestamp in the first received data packet from the transmission timestamp in each subsequently received data packet;
and

adding the difference between the transmission timestamp of the present data packet and the transmission timestamp of the first data packet to the output time of the first data packet to define the output time of the present packet,

wherein the data is MPEG encoded data and the transmission timestamps are separate from and independent of any MPEG timestamps, and the communication system operates according to a Universal Mobile Telecommunications System standard.

7. (Currently amended) Apparatus for correcting timing errors when transmitting isochronous data through a packet based communication network in which at least some of the data packets contain timestamps which indicate to a receiver the time at which the data should be processed, the apparatus comprising means for inserting transmission timestamps in isochronous data packets which relate to an absolute time as defined by a transmission clock, means for transmitting the data packets over a transmission network, means for receiving the data packets and detecting and temporarily recording the transmission timestamps therein, a receiver clock which is synchronised in frequency but not necessarily in absolute time with the transmission clock, means for storing the absolute time of the receiver clock when the first packet containing a transmission timestamp is received, means for adding a given time offset to the stored receiver clock time, the offset being greater than or equal to the maximum variation in time between successive received data packets, to define the output time of the first of the received data packets, means for subtracting the value of the transmission timestamp in the first received data packet from the transmission timestamp in each subsequently received data packet, and means for adding the difference between the transmission timestamp of the present data packet and the transmission timestamp of the first data packet to the output time of the first data packet to define the output time of the present packet, in which the means for inserting the transmission timestamps comprises a Cycle Time Register and the data is audio and/or video signals encoded according to an MPEG standard.

8. (Canceled)

9. (Currently amended) ~~Apparatus as claimed in Claim 8~~ The apparatus of claim 7, in which a plurality of transmitting and/or receiving devices each containing a Cycle Time Register are connected to an IEEE1394 bus and one of the Cycle Time Registers forms a Cycle Master which transmits a Cycle Start packet to the other Cycle Time Registers to maintain them all in synchronism.

10. (Currently amended) ~~Apparatus as claimed in Claim 9~~ The apparatus of claim 9 in which the communication system comprises a plurality of IEEE1394 buses coupled by transmission bridge(s) wherein the Cycle Masters on each bus are synchronised in frequency.

11. (Currently amended) ~~Apparatus as claimed in Claim 10~~ The apparatus of claim 10 in which the bridges are arranged to operate according to the IEEE1394.1 standard

12. (Currently amended) ~~Apparatus as claimed in Claim 7~~ The apparatus of claim 7 in which the communication system employs Asynchronous Transfer Mode.

13. (Currently amended) ~~Apparatus as claimed in Claim 7~~ The apparatus of claim 7 in which the communication system is a Universal Mobile Telecommunications System (UMTS).

14. (Canceled)

15. (Currently amended) ~~Apparatus as claimed in Claim 14 in which~~ The apparatus of claim 7, the transmitting means ~~includes~~ including an MPEG encoder.

16. (Currently amended) ~~Apparatus as claimed in Claim 14 or Claim 15 in which~~ The apparatus of claim 7, the receiver ~~includes~~ including an MPEG decoder.

17. (New) In a packet based transmitting/receiving network, a method of processing isochronous time stamped data packets, comprising synchronizing in frequency clocks in the transmitting/receiving system, and relating the time of processing of a currently received transmission time stamped data packet to the time of processing of a first transmission time stamped data packet.

18. (New) The method of claim 17, comprising storing the absolute time of receipt of the first transmission time stamped data packet, storing a given time offset equal to or greater than the maximum variation in time between successive received data packets, and processing the first transmission time stamped data packet at a time interval corresponding to said given time offset after said absolute time.

19. (New) The method of claim 18, wherein a currently received transmission time stamped data packet is processed at a time corresponding to the time difference between the transmission timestamps of the current data packet and first data packet, after the processing of the first data packet.

20. (New) The method of claim 17, comprising storing the time (t_1) of receipt of a first transmission time stamped data packet, storing a given time offset (δ) equal to or greater than the maximum variation in time between successive received data packets, and relating the time (t), of processing of a current transmission time stamped data packet by the expression:

$$t = t_1 + (\delta) + (T_n - T_1)$$

where T_1 is the transmission time stamp of the first data packet, and

T_n is the transmission time stamp of the current data packet.

21. (New) A packet based transmitting/receiving network comprising transmission means for transmitting isochronous transmission time stamped data packets over the transmission network, said transmission means including a transmission clock, receiving means for receiving the isochronous transmission time stamped data

packets, said receiving means including a receiver clock synchronized in frequency with the transmission clock and processing means for relating the time of processing of a currently received transmission time stamped data packet to the time of processing of a first transmission time stamped data packet.

22. (New) The network of claim 21, wherein the receiving means comprises means for storing the absolute time of receipt of the first transmission time stamped data packet, means for storing a given time offset equal to or greater than the maximum variation in time between successive received data packets, and wherein the processing means processes the first transmission time stamped data packet at a time interval corresponding to said given time offset after said absolute time.

23. (New) The network of claim 22, wherein the processing means includes means for obtaining the difference between the value of the transmission time stamp of the first data packet and the value of the transmission time stamp of the current data packet and means for adding said difference to the time of processing of a first transmission time stamped data packet.

24. (New) The network of claim 21, wherein the processing means comprises means for storing the time (t_1) of receipt of a first transmission time stamped data packet, means for storing a given time offset (δ) equal to or greater than the maximum variation in time between successive received data packets, and means for relating the time (t), of processing of a current transmission time stamped data packet by the expression:

$$t = t_1 + (\delta) + (T_n - T_1)$$

where T_1 is the transmission time stamp of the first data packet, and

T_n is the transmission time stamp of the current data packet.

25. (New) The apparatus of claim 7, in which the communication system comprises a plurality of IEEE 1394 buses and the data is audio and/or video signals encoded according to an MPEG standard.

26. (New) The method of claim 5, wherein the data is transmitted using the Common Isochronous Packet Format defined in IEC61883.

27. (New) The method of claim 6, wherein the data is transmitted using the Common Isochronous Packet Format defined in IEC61883.